



**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Application of : Arnold, L.D. et al.  
Serial No. : 09/831,859  
Filed : December 3, 2001  
Entitled : THE INHIBITION OF THE  
FORMATION OF VASCULAR  
HYPERPERMEABILITY

Attorney Docket No. BBC-059/A

ART UNIT: 1625

EXAMINER: Aulakh, C.

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**CERTIFICATE OF MAILING**

The undersigned hereby certifies under 37 CFR 1.10 that this correspondence is being deposited with the U.S. Postal Service as Express Mail, Express Mail Label No.: **ER225582293US**, in an envelope addressed to the Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on the date indicated below.

October 22, 2003

date of mailing and signature

  
Lisa Rasmussen

Lisa Rasmussen

**INFORMATION DISCLOSURE STATEMENT  
UNDER 37 CFR §§ 1.56, 1.97 AND 1.98**

Sir/Madam:

In accordance with the duty of disclosure under 37 CFR § 1.56, Applicants submit this Information Disclosure Statement pursuant to 37 CFR §§ 1.97 and 1.98 for the above-identified application. Applicants makes the following publications of record in the above-identified application.

**U.S. Patent Documents**

Chatham et al., October 22, 1974, U.S. Patent No. 3,843,664

Coombs et al., October 24, 1974, U.S. Patent No. 3,843,666

Coombs et al., October 22, 1974, U.S. Patent No. 3,843,665

App et al., January 27, 1998, U.S. Patent No. 5,712,395

Habeck et al., January 13, 1976, U.S. Patent No. 3,932,430

Vallee et al., October 30, 1990, U.S. Patent No. 4,966,849

Eissenstat et al., July 19, 1994, U.S. Patent No. 5,330,992

U.S. Patent Documents cont.

Levitzki et al., June 8, 1993, U.S. Patent No. 5,217,999

Spada et al., April 12, 1994, U.S. Patent No. 5,302,606

Foreign Patent Documents

Arnold et al., April 15, 1999, PCT Publication WO 99/17769

Arnold et al., November 4, 1999, PCT Publication WO 99/55335

Kendall et al., December 23, 1998, PCT Publication WO 98/58053

Alitalo et al., August 6, 1998, PCT Publication WO 98/33917

Menrad et al., March 19, 1998, PCT Publication WO 98/11223

Dobrusin et al., February 17, 1994, PCT Publication WO 94/03427

Dow, December 10, 1992, PCT Publication WO 92/21660

Dow et al., October 17, 1991, PCT Publication WO 91/15495

Spada et al., November 26, 1992, PCT Publication WO 92/20642

Buzetti et al., July 7, 1994, PCT Publication WO 94/14808

Davis-Smyth et al., November 27, 1997, PCT Publication WO 97/44453

Pavco et al., May 1, 1997, PCT Publication WO 97/15662

Arnold et al., April 15, 1999, PCT Publication WO 99/17770

Achen et al., February 26, 1998, PCT Publication WO 98/07832

Ferrara et al., May 11, 1994, PCT Publication WO 94/10202

Thomas et al., September 25, 1997, PCT Publication WO 97/34876

Lohmann et al., June 26, 1997, PCT Publication WO 97/22596

Thomas et al., November 13, 1997, PCT Publication WO 97/42187

Jirousek et al., November 6, 1997, PCT Publication WO 97/40830

Aiello et al., November 6, 1997, PCT Publication WO 97/40831

PCT Publication WO 00/27822

PCT Publication WO 01/87846

Barker, November 8, 1995, EP Patent No. 0566266

Other Publications

Schlessinger & Ullrich, 1992, Neuron 9:383-391

Yarden and Ullrich, Ann. Rev. Biochem. 57:433-478, 1998

Other Publications cont.

Ullrich and Schlessinger, 1990, *Cell* 61:203-212  
Fantle et al., 1992, *Cell* 69:413-423  
Songyang et al, 1994, *Mol. Cell. Biol.* 14: 2777-2785  
Songyang et al., 1993, *Cell* 72: 767-778  
Koch et al., 1991, *Science*, 252: 668-678  
Schoelson, *Curr. Opin. Chem. Biol.* (1997), 1(2), 227-234  
Cowburn, *Curr. Opin. Struct. Biol.* (1997), 7(6), 835-838  
Songyang et al., 1993, *Cell* 72:767-778  
Mustonen and Alitalo, *J. Cell. Biol.* 129:895-898, 1995  
Terman et al., *Oncogene* 6:1677-83, 1991  
Oelrichs et al, *Oncogene* 8(1):11-15, 1993  
Matthews et al, *Proc. Natl Acad Sci USA* 88:9026-30, 1991  
Terman et al, *Biochem. Biophys. Res. Comm.* 187: 1579-86, 1992  
Millauer et al., *Cell* 72:835-846, 1993  
DeVries et al., *Science* 255: 989-991, 1992  
Shibuya et al., *Oncogene* 5:519-524, 1990  
Klagsburn and D'Amore, *Cytokine & Growth Factor Reviews* 7:259-270, 1996  
Jakeman et al, *Endocrinology* 133: 848-859, 1993  
Kolch et al., *breast Cancer Research and Treatment* 36:139-155, 1995  
Ferrara et al., *Endocrine Reviews* 18(1):4-25, 1997  
Ferrara et al, *Regulation of Angiogenesis* (ed. L.D. Goldberg and E.M. Rosen), 209-232, 1997  
Connolly, et al., *J. boil. Chem.* 264: 20017-20024  
Brown et al, *Regulation of Angiogenesis* (ed. L.D. Goldberg and E.M. Rosen), 233-269, 1997  
Ferrara et al. (*J. Cell Biochem.* 47:211-218, 1991  
Korpelainen and Alitalo, *Curr. Opin. Cell boil.*, 159-164, 1998  
Park et al., *J. Biol. Chem.* 269:25646-54, 1994  
Maglione et al, *Oncogene* 8:1993  
Migdal et al, *J. Biol. Chem.* 273(35): 22272-22278  
Lymboussaki et al, *Am. J. Pathol.* (1998), 153(2): 395-403  
Witzenbichler et al, *Am. J. Pathol.* (1998), 153(2)  
Ristimaki et al, *J. Biol. Chem.* (198), 273(14), 8413-8418  
Achen et al, *Proc. Natl. Acad Sci USA* (1998), 95(2), 548-553

Other Publications cont.

Stacker, S.A., Vitalia, A., Domagala, T., Nic, E., and Wilks, A.F., "Angiogenesis and Cancer"  
Conferene, Aemr. Assoc. Cancer Res., Jan. 1998, Orlando, FL  
Williams, Diabetologia 40:S118-120 (1997)  
Kendall & Thomas, 1994, Proc. Natl. Acad Sci 90:10705-09  
Kim et al., 1993, Nature 362:841-844  
Jellinek, et al, Biochemistry 33:10450-56  
Takano et al, 1993, Mol. Bio Cell 4:358A  
Kinsella et al, 1992, Exp. Cell Res. 199:56-62  
Wright et al, 1992, J. Cellular Phys. 152:448-57  
Marianai, et al., 1994, Proc. Am. Assoc. Cancer Res. 35:2268  
Expert Opin. Ther. Pat. (1998), 8(4):475-478

Form PTO-1449 listing each of these documents and photocopies of each document are enclosed herewith for the Examiner's convenience.

Pursuant to 37 CFR §1.97(c)(2), this submission is accompanied by the fee under § 1.17(p).

Applicant does not intend to represent that any of the documents submitted herein is material prior art to this invention or that the list represents an exhaustive search of documents related to this invention.

Applicant respectfully requests that the documents submitted herein be considered and made of record in this application.

Respectfully submitted,



Gayle B. O'Brien  
Agent for Applicant  
Registration No. 48,812  
Abbott Bioresearch Center, Inc.  
100 Research Drive  
Worcester, MA 01605-4314  
Telephone: (508) 688-8053  
Telefax: (508) 688-8110

**INFORMATION DISCLOSURE CITATION**  
(Use several sheets if necessary)

Docket Number (Optional) <b>BBC-059/A</b>	Application Number <b>09/831,859</b>
Applicant(s) <b>Lee D. Arnold et al.</b>	
Filing Date <b>December 3, 2001</b>	Group Art Unit <b>1625</b>

**U.S. PATENT DOCUMENTS**

*EXAMINER INITIAL	REF	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
		3,843,664	10/22/1974	Chatham et al.			
		3,843,666	10/24/1974	Coombs et al.			
		3,843,665	10/22/1974	Coombs et al.			
		5,712,395	01/27/1998	App et al.			
		3,932,430	01/13/1976	Habeck et al.			
		4,966,849	10/30/1990	Vallee et al.			
		5,330,992	07/19/1994	Eissenstat et al.			
		5,217,999	06/08/1993	Levitzki et al.			
		5,302,606	04/12/1994	Spada et al.			

**FOREIGN PATENT DOCUMENTS**

REF	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	Translation	
						YES	NO
	99/17769	04/15/1999	WO				
	99/55335	11/04/1999	WO				
	98/58053	12/23/1998	WO				
	98/33917	08/06/1998	WO				
	98/11223	03/19/1998	WO				

**OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)**

		Schlessinger & Ullrich, "Growth Factor Signaling by Receptor Tyrosine Kinases", Neuron 9:383-391, 1992
		Yarden and Ullrich, "Growth Factor Receptor Tyrosine Kinases", Ann. Rev. Biochem. 57:433-478, 1998

EXAMINER	DATE CONSIDERED
----------	-----------------

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP Section 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

**INFORMATION DISCLOSURE CITATION**  
*(Use several sheets if necessary)*

(Use several sheets if necessary)

Docket Number (Optional) **BBC-059/A**

Application Number

**Applicant(s)**

**Filing Date**

**December 3, 2001**

### Group Art Unit

1625

## U.S. PATENT DOCUMENTS

## FOREIGN PATENT DOCUMENTS

REF	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	Translation	
						YES	NO
	94/03427	02/17/1994	WO				
	92/21660	12/10/1992	WO				
	91/15495	10/17/1991	WO				
	92/20642	11/26/1992	WO				
	94/14808	07/07/1994	WO				

**OTHER DOCUMENTS** (*Including Author, Title, Date, Pertinent Pages, Etc.*)

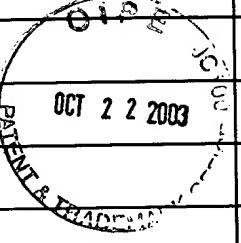
Ullrich and Schlessinger, "Signal Transduction by Receptors with Tyrosine Kinase Activity", *Cell* 61:203-212, 1990

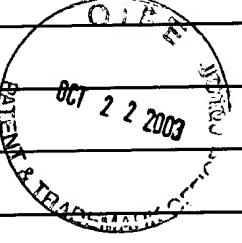
Fantle et al., "Distinct Phosphotyrosines on a Growth Factor Receptor Bind to Specific Molecules that Mediate Different Signaling Pathways", *Cell* 69:413-423, 1992

**EXAMINER**

**DATE CONSIDERED**

**EXAMINER:** Initial if citation considered, whether or not citation is in conformance with MPEP Section 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

INFORMATION DISCLOSURE CITATION (Use several sheets if necessary)				Docket Number (Optional) <b>BBC-059/A</b>	Application Number <b>09/831,859</b>		
				Applicant(s) <b>Lee D. Arnold et al.</b>			
				Filing Date <b>December 3, 2001</b>	Group Art Unit <b>1625</b>		
<b>U.S. PATENT DOCUMENTS</b>							
*EXAMINER INITIAL	REF	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
							
<b>FOREIGN PATENT DOCUMENTS</b>							
REF	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	Translation	
						YES	NO
	97/44453	11/27/1997	WO				
	97/15662	05/01/1997	WO				
	99/17770	04/15/1999	WO				
	98/07832	02/26/1998	WO				
	94/10202	05/11/1994	WO				
<b>OTHER DOCUMENTS</b> (Including Author, Title, Date, Pertinent Pages, Etc.)							
		Songyang et al, "Specific Motifs Recognized by the SH2 Domains of Csk, 3BP2, fps/fes, GRB-2, HCP, SHC, Syk and Vav", 1994, Mol. Cell. Biol. 14: 2777-2785					
		Marianai, et al., "Inhibition of Angiogenesis by FCE 26806, a Potent Tyrosine Kinase Inhibitors", 1994, Proc. Am. Assoc. Cancer Res. 35:2268					
EXAMINER				DATE CONSIDERED			

<b>INFORMATION DISCLOSURE CITATION</b> <i>(Use several sheets if necessary)</i>				Docket Number (Optional) <b>BBC-059/A</b>		Application Number <b>09/831,859</b>		
				Applicant(s) <b>Lee D. Arnold et al.</b>		Filing Date <b>December 3, 2001</b>		Group Art Unit <b>1625</b>
<b>U.S. PATENT DOCUMENTS</b>								
*EXAMINER INITIAL	REF	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE	
								
<b>FOREIGN PATENT DOCUMENTS</b>								
	REF	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	Translation	
							YES	NO
		97/34876	09/25/1997	WO				
		97/22596	06/26/1997	WO				
		97/42187	11/13/1997	WO				
		97/40830	11/06/1997	WO				
		97/40831	11/06/1997	WO				
<b>OTHER DOCUMENTS</b> <i>(Including Author, Title, Date, Pertinent Pages, Etc.)</i>								
		Koch et al., "SH2 and SH3 Domains: Elements that Control Interactions of Cytoplasmic Signaling Proteins", 1991, Science, 252: 668-678						
		Schoelson, "SH2 and PTB Domain Interactions in Tyrosine Kinase Signal Transduction", Curr. Opin. Chem. Biol. (1997), 1(2), 227-234						
<b>EXAMINER</b>				<b>DATE CONSIDERED</b>				

<b>INFORMATION DISCLOSURE CITATION</b> <i>(Use several sheets if necessary)</i>				Docket Number (Optional) <b>BBC-059/A</b>		Application Number <b>09/831,859</b>	
				Applicant(s) <b>Lee D. Arnold et al.</b>		Filing Date <b>December 3, 2001</b>	
<b>U.S. PATENT DOCUMENTS</b>							
*EXAMINER INITIAL	REF	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
<b>FOREIGN PATENT DOCUMENTS</b>							
REF	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	Translation	
						YES	NO
	00/27822	05/18/2000	WO				
	01/87846	11/22/2001	WO				
	0566266	11/08/1995	EP				
<b>OTHER DOCUMENTS</b> <i>(Including Author, Title, Date, Pertinent Pages, Etc.)</i>							
		Cowburn, "Peptide Recognition by PTB and PDZ Domains", Curr. Opin. Struct. Biol. (1997), 7(6), 835-838					
		Songyang et al., "SH2 Domains Recognize Specific Phosphopeptide Sequences", 1993, Cell 72:767-778					
<b>EXAMINER</b>				<b>DATE CONSIDERED</b>			

**INFORMATION DISCLOSURE CITATION**  
(Use several sheets if necessary)

Docket Number (Optional) <b>BBC-059/A</b>	Application Number <b>09/831,859</b>
Applicant(s) <b>Lee D. Arnold et al.</b>	
Filing Date <b>December 3, 2001</b>	Group Art Unit <b>1625</b>

*EXAMINER INITIAL	OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)
OIP	Mustonen and Alitalo, "Endothelial Receptor Tyrosine Kinases Involved in Angiogenesis", <i>J. Cell. Biol.</i> 129:895-898, 1995
OCT 22 2003	Terrian et al., "Identification of a New Endothelial Cell Growth Factor Receptor Tyrosine Kinase", <i>Oncogene</i> 6:1677-83, 1991
SEARCHED	Oelrichs et al, NYK/FLK-1: A Putative receptor Tyrosine Kinase Isolated from E10 Embryonic Neuroepithelium is Expressed in Endothelial Cells of the Developing Embryo", <i>Oncogene</i> 8(1):11-15, 1993
	Matthews et al, "A Receptor Tyrosine Kinase cDNA Isolated from a Population of Enriched Primitive Hematopoietic Cells and Exhibiting Close Genetic Linkage to c-kit", <i>Proc. Natl Acad Sci USA</i> 88:9026-30, 1991
	Terrian et al, "Identification of the KDR Tyrosine Kinase as a Receptor for Vascular Endothelial Cell Growth Factor", <i>Biochem. Biophys. Res. Comm.</i> 187: 1579-86, 1992
	Millauer et al., "High Affinity VEGF Binding and Developmental Expression Suggest Flk-1 as a Major regulator of Vasculargenesis and Angiogenesis", <i>Cell</i> 72:835-846, 1993
	DeVries et al., The fms-Like Tyrosine Kinase, a Receptor for Vascular Endothelial Growth Factor", <i>Science</i> 255: 989-991, 1992
	Shibuya et al., "Nucleotide Sequence and Expression of a Novel Human Receptor-type Tyrosine Kinase Gene(flt) Closely related to the fms Family", <i>Oncogene</i> 5:519-524, 1990
	Klagsburn and D'Amore, "Vascular Endothelial Growth Factor and its Receptors", <i>Cytokine &amp; Growth Factor Reviews</i> 7:259-270, 1996
	Jakeman et al, "Development Expression of Binding Sites and Messenger Ribonucleic Acid for Vascular Endothelial Growth Factor Suggests a Role for this Protein in Vasculargenesis and Angiogenesis", <i>Endocrinology</i> 133: 848-859, 1993
	Kolch et al., "Regulation of the Expression of the VEGF/VPS and its receptors: Role in Tumor Angiogenesis", <i>Breast Cancer Research and Treatment</i> 36:139-155, 1995
	Ferrara et al., "The Biology of Vascular Endothelial Growth Factor", <i>Endocrine Reviews</i> 18(1):4-25, 1997

EXAMINER

DATE CONSIDERED

\*EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP Section 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<b>INFORMATION DISCLOSURE CITATION</b> <i>(Use several sheets if necessary)</i>		Docket Number (Optional) <b>BBC-059/A</b>	Application Number <b>09/831,859</b>
		Applicant(s) <b>Lee D. Arnold et al.</b>	Filing Date <b>December 3, 2001</b>
*EXAMINER INITIAL	OTHER DOCUMENTS <i>(Including Author, Title, Date, Pertinent Pages, Etc.)</i>		
	Ferrara et al, "Vascular Endothelial Growth Factor: Basic Biology and Clinical Implications", Regulation of Angiogenesis (ed. L.D. Goldberg and E.M. Rosen), 209-232, 1997		
OCT 22 2003 RECD	Connolly, et al., "Human Vascular Permeability Factor", J. Biol. Chem. 264: 20017-20024		
	Brown et al, "Vascular Permeability Factor/Vascular Endothelial Growth Factor: A Multifunctional Angiogenic Cytokine", Regulation of Angiogenesis (ed. L.D. Goldberg and E.M. Rosen), 233-269, 1997		
	Ferrara et al., "The Vascular Endothelial Growth Factor Family of Polypeptides", J. Cell Biochem. 47:211-218, 1991		
	Korpelainen and Alitalo, "Signaling Angiogenesis and Lymphangiogenesis", Curr. Opin. Cell Biol., 159-164, 1998		
	Park et al., "Placenta Growth Factor", J. Biol. Chem. 269:25646-54, 1994		
	Maglione et al, "Two alternative mRNAs coding for the Angiogenic Factor, Placenta Growth Factor (PIGF), are Transcribed from a Single Gene of Chromosome 14", Oncogene 8:1993		
	Migdal et al, "Neuropilin-1 is a Placenta Growth Factor-2 Receptor", J. Biol. Chem. 273(35): 22272-22278		
	Lymboussaki et al, "Expression of the Vascular Endothelial Growth Factor C Receptor VEGFR-3 in Lymphatic Endothelium of the Skin and in Vascular Tumors", Am. J. Pathol., (1998), 153(2): 395-403		
	Witzenbichler et al, "Vascular Endothelial Growth Factor-c (VEGF-C/VEGF-2) Promotes Angiogenesis in the Setting of Tissue Ischemia", Am. J. Pathol. (1998), 153(2)		
	Ristimaki et al, "Proinflammatory Cytokines regulate Expression of the Lymphatic Endothelial Mitogen Vascular Endothelial Growth Factor-C", J. Biol. Chem. (1998), 273(14), 8413-8418		
	Achen et al, "Vascular Endothelial Growth Factor D (VEGF-D) is a Ligand for the Tyrosine Kinase VEGF Receptor 2 (Flk1) and VEGF Receptor 3 (Flt4)", Proc. Natl. Acad. Sci USA (1998), 95(2), 548-553		
EXAMINER		DATE CONSIDERED	

\*EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP Section 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

**INFORMATION DISCLOSURE CITATION**  
(Use several sheets if necessary)

Docket Number (Optional) <b>BBC-059/A</b>	Application Number <b>09/831,859</b>
Applicant(s) <b>Lee D. Arnold</b>	
Filing Date <b>December 3, 2001</b>	Group Art Unit <b>1625</b>

*EXAMINER INITIAL	OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)
O I P PATENT TRADEMARK OCT 22 2003	Stacker, S.A. et al., "Mutations in the V3 Domain of the Cysteine-Knot Motif of Mouse Vascular Endothelial Growth Factor (VEGF) Modulate the Interaction with VEGFR2 (FLK-1) but do not inhibit Vascular Permeability", Angiogenesis and Cancer Conference, Aemr. Assoc. Cancer Res., Jan. 1998, Orlando, FL
	Williams, "Factors Regulating the Expression of Vascular Permeability/Vascular Endothelial Growth Factor by Human Vascular Tissues", Diabetologia 40:S118-120 (1997)
	Kendall & Thomas, "Inhibition of Vascular Endothelial Cell Growth Factor Activity by an Endogenously Encoded Soluble Receptor", Proc. Natl. Acad Sci 90:10705-09, 1994
	Kim et al., "Inhibition of Vascular Endothelial Growth Factor-Induced Angiogenesis Suppresses Tumour Growth in vivo", 1993, Nature 362:841-844
	Jellinek, et al, "Inhibition of Receptor Binding by High-Affinity RNA Ligands to Vascular Endothelial Growth Factor", Biochemistry 33:10450-56, 1994
	Takano et al, "Inhibition of Angiogenesis by a Novel Diaminoanthraquinone that Inhibits Protein Kinase C.", 1993, Mol. Bio Cell 4:358A
	Kinsella et al, "Protein Kinase C Regulates Endothelial Cell Tube Formation on Basement Membrane Matrix, Matrigel", 1992, Exp. Cell Res. 199:56-62
	Wright et al, "Inhibition of Angiogenesis in vitro and in ovo with an Inhibitor of Cellular Protein Kinases, MDL 27032", 1992, J. Cellular Phys. 152:448-57
	"4-Anilinoquinazoline Derivatives", Expert Opin. Ther. Pat. (1998), 8(4):475-478
EXAMINER	DATE CONSIDERED

\*EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP Section 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.